User's Manual

DR232/DR242 Hybrid Recorder (Expandable Type)

Notice of Alterations

Please note the following(underlined) alterations to the IMDR232-01E.

■ Page 3 "Main Unit DR232/DR242"

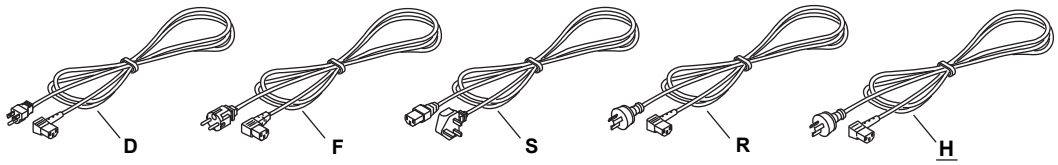
Model	Suffix Code	Description
.....	.....	
Power Cord	D·····	3-pin inlet w/UL, CSA cable* (Part No. A1074WD)
	F·····	3-pin inlet w/VDE cable* (Part No. A1009WD)
	R·····	3-pin inlet w/AS cable* (Part No. A1024WD)
	S·····	3-pin inlet w/BS cable* (Part No. A1023WD)
	H·····	3-pin inlet w/GB cable* (complies with the CCC)(Part No. A1064WD)
	W·····	3-pin inlet with screw conversion terminal**
	.....	

■ Page 3 "Subunit DS400/DS600"

Model	Suffix Code	Description
.....	.....	
Power Cord	D·····	3-pin inlet w/UL, CSA cable (Part No. A1074WD)
	F·····	3-pin inlet w/VDE cable (Part No. A1009WD)
	R·····	3-pin inlet w/AS cable (Part No. A1024WD)
	S·····	3-pin inlet w/BS cable (Part No. A1023WD)
	H·····	3-pin inlet w/GB cable (complies with the CCC)(Part No. A1064WD)
	W·····	3-pin inlet with screw conversion terminal (when power supply suffix code is -1)
	.....	

■ Page 5 "Standard Accessories"

1. One of these power cord types is supplied according to the instrument's suffix code



The "7. Clamp filter (Part No. A1197MN)" is not supplied.

■ Page 7 "Safety Precautions"

The following caution has been added.

CAUTION

This instrument is a Class A product. Operation of this instrument in a residential area may cause radio interference, in which case the user is required to take appropriate measures to correct the interference.

■ Page 2-14 "HOLD/NON-HOLD Setting"

You can select whether to hold the operating status of operated internal switches or alarm output relays. This setting applies to both the internal switches and the alarm output relays.
However, non-hold always applies to relays for which the reflash alarm is set, regardless of the hold/non-hold setting.

■ Page 2-18 “External In/Output Function (alarm module or DI/DO module is required)”

- **Fail Output ***
  One transfer contact in the DI/DO module is used for fail output. This relay will change to the de-energized status when a failure of the recorder occurs.
  * Fails are output when CPU abnormalities, power failures, or other problems occur. They are not output as a result of errors in recognizing I/O output modules or subunits, or of overranges or errors in measured data.

■ Page 3-5 “Installation Method”

- **Direct panel mounting**
  Attach the unit to the 2 mm-thick metal plate using the 6 screws included (length : 16 mm) according to the figure below.

■ Page 3-20 “WARNING”

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- When 30 VAC or 60 VDC and more is applied to the output terminal of the alarm output module or the output terminal of the DI/DO module, use double-insulated wires (withstand voltage performance: more than 2300 VAC) for those wires which apply 30 VAC or 60 VDC and more. All other wires can be basic-insulated (withstand voltage performance: more than 1390 VAC).·····
- To prevent fire, use signal wires having a temperature rating of 75°C or more.

■ Page 3-20 “CAUTION”

.....

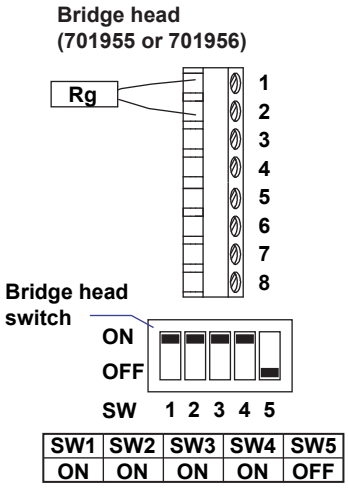
- The overvoltage category of each input module is CAT II (IEC61010-1, CSA22.2 No.61010-1).
- The measurement category of each input module is CAT II (IEC61010-1, CSA22.2 No.61010-1).
- When connecting to a clamp terminal, use a signal conductor with the following cross-sectional width:

.....

■ Page 3-23, 3-24, 3-25 “Wiring Strain Input Signal Lines (Strain Input Module)”

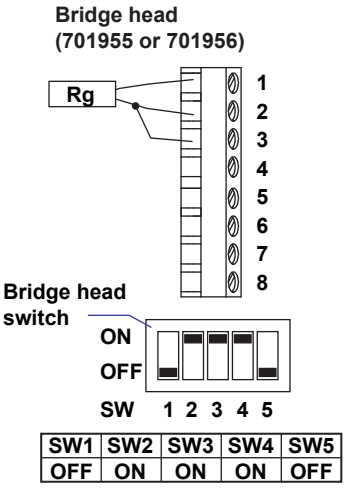
In the wiring diagrams of each gauge method, the wiring diagram for the bridge box used for the DU500-14 has been changed to the following:

• Single-gauge method



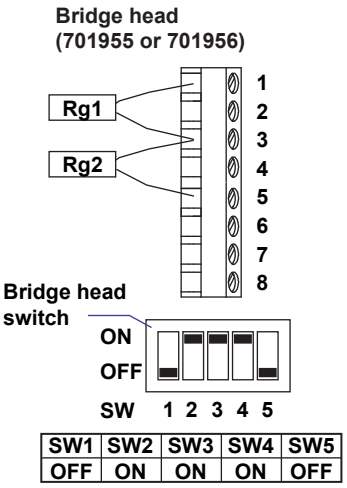
SW1	SW2	SW3	SW4	SW5
ON	ON	ON	ON	OFF

• Single-gauge three-wire method



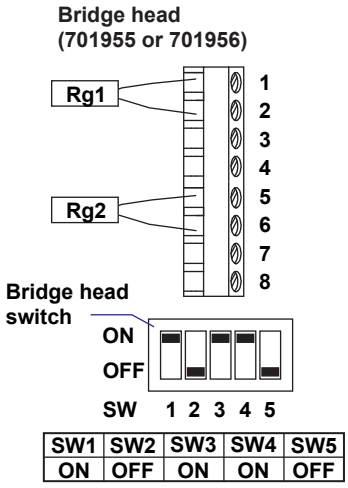
SW1	SW2	SW3	SW4	SW5
OFF	ON	ON	ON	OFF

• Adjacent-side two-gauge method



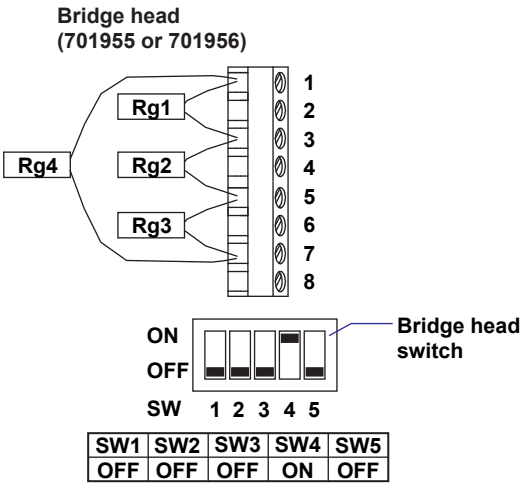
SW1	SW2	SW3	SW4	SW5
OFF	ON	ON	ON	OFF

• Opposed-side two-gauge method



SW1	SW2	SW3	SW4	SW5
ON	OFF	ON	ON	OFF

• Four-gauge method



SW1	SW2	SW3	SW4	SW5
OFF	OFF	OFF	ON	OFF

■ Page 3-26 “CAUTION”

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- The power monitor module is a product belonging to Installation (Over-voltage) Category CAT II (IEC61010-1, CSA22.2 No.61010-1).
- The power monitor module is a product belonging to Measurement Category CAT II (IEC61010-1, CSA22.2 No.61010-1).

■ Page 3-31 “WARNING”

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- To prevent electric shock, do not touch the terminals after wiring.
- Furnish a switch (double-pole type) to separate the instrument from the main power supply in the power supply line. In addition, make sure to indicate that the switch is a power control for the instrument on the switch and the ON/OFF positions of the switch.

  Switch Specifications

  Steady-state current rating: 3 A or more, inrush current rating: 90 A or more
  Use a switch complied with IEC60947-1, -3.
- Do not add a switch or fuse to the ground line.

■ Page 4-13 “Clock Display”

The date and time can be displayed on sub-display 2.

According to the set time in 3.10, “Setting the Date and Time” (see page 3-35), the current date and time is displayed.

The display shows the month, day, year and hour, minute, second in this sequence.

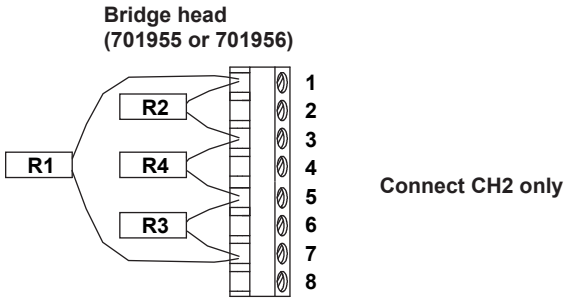
■ Page 13-5 “Error Codes”

The following error codes have been added to the list.

Error Codes	Error	Corrective Action
012	None of the channels specified in execution of initial balance were strain input channels.	Enter a correct channel.
013	Attempted “REP RECALL START” without hourly, daily, or monthly report data.	
032	Set to contiguous channels on the power monitor module.	Enter a correct channel.
047	Entered a wiring method for which there is no setting for the power monitor module.	Enter the correct wiring method.
107	Attempted to change ranges or time while report was starting.	Do not make changes.
131	Media write error	Exchange the medium.
137	Attempted to start computation or execute a procedure during saving of settings to a medium or while reading from a medium.	Start the procedure or computation after completion of the media operation.
138	Media drive error	Exchange the medium. If the error occurs again after exchanging the medium, servicing is required.
146	An initial balancing error occurred during calibration.	Check the wiring and try calibration again.

■ Page 13-8 “calibrations”

For “Strain measurement” under “Connection,” the wiring diagram for the bridge box used for the DU500-14 has been changed to the following:



SW1	SW2	SW3	SW4	SW5
OFF	OFF	OFF	ON	OFF

■ Page 14-3 “Standard Computation Functions”

Scaling

Measurement accuracy for scaling: measurement accuracy for scaling (digits) = measurement accuracy (digits) × scaling span (digits) / measurement span (digits) + 2 digits. Numbers below the decimal point are rounded up.

±(((0.05/100) × 5000) + 2) × (2000/4000) + 2 = ±4.25

Measurement accuracy = ±5 digits = ±0.005 V

■ Page 14-8 “Normal Operation Conditions”

Installation category based on IEC61010-1, CSA22.2 No.61010-1

II*1

Pollution degree based on IEC61010-1, CSA22.2 No.61010-1

2*2

Warm-up time

At least 30 minutes after power switch-on.

*1 Describes a number which defines a transient overvoltage condition. It implies the regulation for impulse withstand voltage. “II” applies to electrical equipment which is supplied from fixed installations like distribution boards.

*2 Describes the degree to which a solid, liquid, or gas which deteriorates dielectric strength or surface resistivity is adhering. “2” applies to normal indoor atmosphere. Normally, only non-conductive pollution occurs.

■ Page 14-9 “EMC Eonformity Standards”

Please refer to these specifications instead of the one printed in the user's manual.

Safety and EMC Standards

CSA	CSA22.2 No.61010-1, installation category II, pollution degree 2
UL	UL61010-1 (CSA NRTL/C)
C-Tick	EN55011 compliance, Class A, Group 1
KC marking	Electromagnetic wave interference prevention standard, electromagnetic wave protection standard compliance

■ Page 14-12 “Measurement range, accuracy and resolution”

Input	Type	Measurement (digital display)		Maximum resolution
		Measurement range	Measurement accuracy	
DC Voltage	20mV	–20.000 to 20.000mV	(0.05% of rdg + 5digits)	1μV
	60mV	–60.00 to 60.00mV	(0.05% of rdg + 2digits)	10μV
	200mV	–200.00 to 200.00mV	(0.05% of rdg + 2digits)	10μV
	2V	–2.0000 to 2.0000V	(0.05% of rdg + 2digits)	100μV
	:	:	:	:

■ Page 14-15, 14-19, 14-21, 14-23, 14-25 “Specifications of Module”

Installation Category (Overvoltage Category)

CAT II (IEC61010-1, CSA22.2 No.61010-1)

Measurement Category

CAT II (IEC61010-1, CSA22.2 No.61010-1)

■ Page 14-20 “Measuring Ranges and Accuracies”

Gauge Method	Measurement Range Type	Rated Measurement Range	Accuracy	Resolution
Single-gauge	2000με	-2000 to 2000με	0.5% of Range	0.1με
	20000με	-20000 to 20000με	0.3% of Range	1με
	200000με	-200000 to 200000με	0.3% of Range	10με
Two-gauge	1000με	-1000 to 1000με	0.5% of Range	0.1με
	10000με	-10000 to 10000με	0.3% of Range	1με
	100000με	-100000 to 100000με	0.3% of Range	10με
Four-gauge	500με	-500 to 500με	0.5% of Range	0.1με
	5000με	-5000 to 5000με	0.3% of Range	1με
	50000με	-50000 to 50000με	0.3% of Range	10με

■ Page 14-21 “Specifications of Strain Input Module”

Accesorry

Bridge head: 701955, 701956